



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/781,598

02/18/2004

Paul J. Travers

85941.000050

2668

23387

7590

11/15/2005

Stephen B. Salai, Esq.
Harter, Secrest & Emery LLP
1600 Bausch & Lomb Place
Rochester, NY 14604-2711

EXAMINER

DINH, JACK

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/781,598 | Applicant(s) TRAVERS, PAUL J. | |
| | Examiner Jack Dinh | Art Unit 2873 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) 23-84 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 7-9, 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>11/05</u> . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0804</u> . | 6) <input checked="" type="checkbox"/> Other: <u>DETAILED ACTION</u> . |

DETAILED ACTION

Election/Restrictions

1. The election of Group I, claims 1-65, filed on 08/31/05 has been acknowledged. Upon further consideration, a further restriction is required as followed:

This application contains claims directed to the following patentably distinct species of the claimed invention: Group IA, claims 1-22, is directed to a species of image display wherein the ambient light is combined with the image light; Group IB, claims 23-65, is directed to a species of image display wherein the backlit image source includes a controllable polarization rotator that is responsive to the application of a control signal for varying local polarization characteristics.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after

Art Unit: 2873

the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Thomas B. Ryan on 11/11/05, a provisional election was made without traverse to prosecute the invention of group IA, claims 1-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-65 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 10, 11, 14, 15, 19 and 20 are rejected under 35 U.S.C. 102(b) as being unpatentable by Nakayama et al. (US Patent 5,808,801).

Regarding claim 1, Nakayama (figure 5) is interpreted as disclosing a non-immersive virtual image display for combining image light and ambient light comprising a housing (not shown), a backlit image source **1** and a reflective focusing optic **6** supported by the housing and aligned along a common optical axis, a viewing aperture (not shown) and an ambient-light-admitting aperture formed in the housing and aligned along a viewing axis that is inclined to the common optical axis, a beamsplitter **3** supported by the housing at an intersection of the common optical axis and the viewing axis, and the beam splitter being positioned for transmitting image light between the backlit image source and the reflective focusing optic along the common optical axis, reflecting the transmitted image light between the reflective focusing optic and the viewing aperture along the viewing axis, and transmitting ambient light between the ambient-light-admitting aperture and the viewing aperture along the viewing axis superimposed upon the transmitted image light that is reflected along the viewing axis (col. 6, lines 23-40).

Regarding claim 2, Nakayama is interpreted as further disclosing that the reflective optic is fully reflective (col. 6, line 36).

Regarding claim 3, Nakayama (figure 5) is interpreted as further disclosing that the common optical axis extends in a substantially horizontal direction within a transverse plane that intersects an observer's eyes and that includes the viewing axis.

Regarding claim 4, Nakayama (figure 5) is interpreted as further disclosing that the beamsplitter includes an interface at which incident light is transmitted and reflected, and the beamsplitter interface extends substantially normal to the transverse plane.

Regarding claim 5, Nakayama (figure 5) is interpreted as further disclosing that the backlit image source includes an output plane that extends substantially normal to the transverse plane.

Regarding claim 6, Nakayama is interpreted as further disclosing an ambient-light-admitting adjuster that regulates the amount of ambient light transmitted between the ambient-light-admitting aperture and the viewing aperture along the viewing axis (col. 6, lines 45-60).

Regarding claims 10 and 11, Nakayama is interpreted as further disclosing an optically active component or filter located between the ambient-light admitting aperture and the beamsplitter for altering the ambient light that is combined with the transmitted image light along the viewing axis (col. 6, lines 45-66).

Regarding claim 14, Nakayama (figure 5) is interpreted as disclosing a non-immersive virtual display for combining image light and ambient light comprising a housing (not shown) having an ambient-light-admitting aperture and a viewing aperture, a backlit image source 1, a reflector 6, the housing enclosing optical transmissions of image light from the image source to the reflector along a first optical pathway and ambient light from the ambient-light-admitting aperture to the viewing aperture along a second optical pathway, a beamsplitter 3 located at an intersection of the first and second optical pathways supporting the transmissions of image light from the backlit image source to the reflector along the first optical pathway and ambient light from the ambient-light-admitting aperture to the viewing aperture along a second optical pathway, and the beamsplitter also supporting reflection of the transmitted image light from the reflector to the viewing aperture for combining the transmitted image light with the transmitted ambient light along the second optical pathway (col. 6, lines 23-40).

Regarding claim 15, Nakayama is interpreted as further disclosing an ambient-light-admitting adjuster that regulates the amount of ambient light transmitted between the ambient-light-admitting aperture and the viewing aperture along the viewing axis (col. 6, lines 45-60).

Regarding claims 19 and 20, Nakayama is interpreted as further disclosing an optically active component or filter located between the ambient-light admitting aperture and the beamsplitter for altering the ambient light that is combined with the transmitted image light along the viewing axis (col. 6, lines 45-66).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12, 13, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US Patent 5,808,801), as applied to claims 10 or 19 above.

Regarding claims 12, 13, 21 and 22, Nakayama is interpreted as disclosing all the claimed limitations except that the optically active component is a lens or a polarizer. However, simply placing a lens or a polarizer in the path of the light beam to achieve the intended effect created by the lens or the polarizer would have been obvious to one of ordinary skill in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a lens or a polarizer, for the purpose of altering the ambient light.

Allowable Subject Matter

5. Claims 7-9 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter. Regarding claims 7 and 16, the prior art fails to disclose that both the beamsplitter and the ambient-light-admitting aperture are polarization sensitive, and the ambient-light-admitting adjuster varies polarization sensitivities between the beamsplitter and the ambient-light-admitting aperture. Regarding claim 8, the prior art fails to disclose that both the

Art Unit: 2873

beamsplitter and the ambient-light-admitting aperture are associated with polarizers, and the ambient-light-admitting adjuster varies a relative angular orientation of the ambient-light-admitting aperture polarizer with respect to the beamsplitter polarizer. Regarding claims 9 and 18, the prior art fails to disclose that the beamsplitter is polarization sensitive and further comprising a phase adjuster for rotating polarization of the image light transmitted through the polarization-sensitive beamsplitter en route to and from the reflective focusing optic.

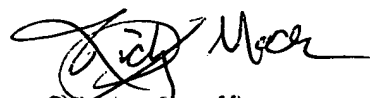
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is 571-272-2327. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky L. Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack Dinh



RICKY L. MACK
PRIMARY EXAMINER